Drinking Water Surveillance Program

OTTAWA (BRITANNIA) WATER TREATMENT PLANT

Annual Report 1988

Environment Canada
Environnement Canada

ISSN 0839-9026

91-02655/

OTTAWA (BRITANNIA) WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

FEBRUARY 1990

Copyright: Queen's Printer for Ontario, 1990
This publication may be reproduced for non-commercial purposes with appropriate attribution.

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

OTTAWA (BRITANNIA) WATER TREATMENT PLANT
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Ottawa (Britannia) Water Treatment Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection, post pH adjustment and fluoridation. This plant has a design capacity of 247 x 1000 m^3/day and in conjunction with the Lemieux Island plant, serves a population of approximately 515,000.

Samples of the raw and treated water from the Ottawa (Britannia) Water Treatment Plant plus water samples from two distribution system sites were taken on a monthly basis and analyzed for approximately 160 parameters. Parameters were divided into the following groups Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organics (Chloroaromatics, Chlorophenols, Pesticide and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed in June and November only.

A summary of results is shown in Table 1.

Inorganic and Physical parameters (Laboratory Chemistry, Field Chemistry and Metals) were below any applicable health related ODWOs.

Of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Ottawa (Britannia) Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA)

SUMMARY TABLE BY SCAN

SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE	SITE 2 TESTS	SITE 2 POSITIVE	SITE 2 %POSITIVE
BACTERIOLOGICAL	44	44	100	44	7	15	40	6	15	44	14	31
CHEMISTRY (FLD)	36	36	100	71	71	100	128	128	100	120	120	100
CHEMISTRY (LAB)	236	203	86	236	197	83	387	334	86	387	339	87
METALS	288	124	43	288	103	35	564	236	41	564	242	42
CHLORGAROMATICS	140	0	0	154	0	0	140	0	0	154	0	0
CHLOROPHENOLS	12	0	0	12	0	0	.	.	.	.	.	.
PAH	204	0	0	204	0	0	.	.	.	.	.	.
PESTICIDES & PCB	354	0	0	375	0	0	354	0	0	375	0	0
PHENOLICS	11	6	54	12	6	50	.	.	.	.	.	.
SPECIFIC PESTICIDES	56	0	0	56	0	0	0	0	0	0	0	0
VOLATILES	285	2	0	283	28	9	255	24	9	284	28	9
TOTAL	1666	415		1735	412		1868	728		1928	743	

NO HEALTH-RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

OTTAWA (BRITANNIA) WATER TREATMENT PLANT
1988 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP was initiated at the Ottawa (Britannia) Water Treatment Plant in the fall of 1986. Annual reports were published for 1986 (ISBN 0-7729-2550-X) and 1987 (ISSN 0839-9026).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Ottawa (Britannia) Water Treatment Plant is a conventional treatment plant which treats water from the Ottawa River. The process consists of coagulation, flocculation, sedimentation, filtration, disinfection, post pH adjustment and fluoridation. It has a design capacity of 247.0 x 1000 m^3/day and sample day flows

ranging from 77 x 1000 m^3/day to 186 x 1000 m^3/day. This plant, in conjunction with the Lemieux Island plant, serves a population of approximately 515,000.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from four DWSP approved locations;

i) Plant Raw - The water originated from the intake pipe prior to chlorination and was sampled through a stainless steel line. The sample tap is located in the plant laboratory.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a copper sample line. The sample tap is located in the plant laboratory.

iii) Distribution System - Site 1 - This house is approximately 3 kilometers from the plant. Water was sampled, through copper plumbing, from the kitchen tap.

iv) Distribution System - Site 2 - This house is approximately 8 kilometers from the plant.

Water was sampled, through copper plumbing, from the basement laundry tap.

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At all distribution system locations two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing, due to leaching from (or deposition on), the plumbing system. The only analyses carried out on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

OTTAWA (BRITANNIA) WATER TREATMENT PLANT

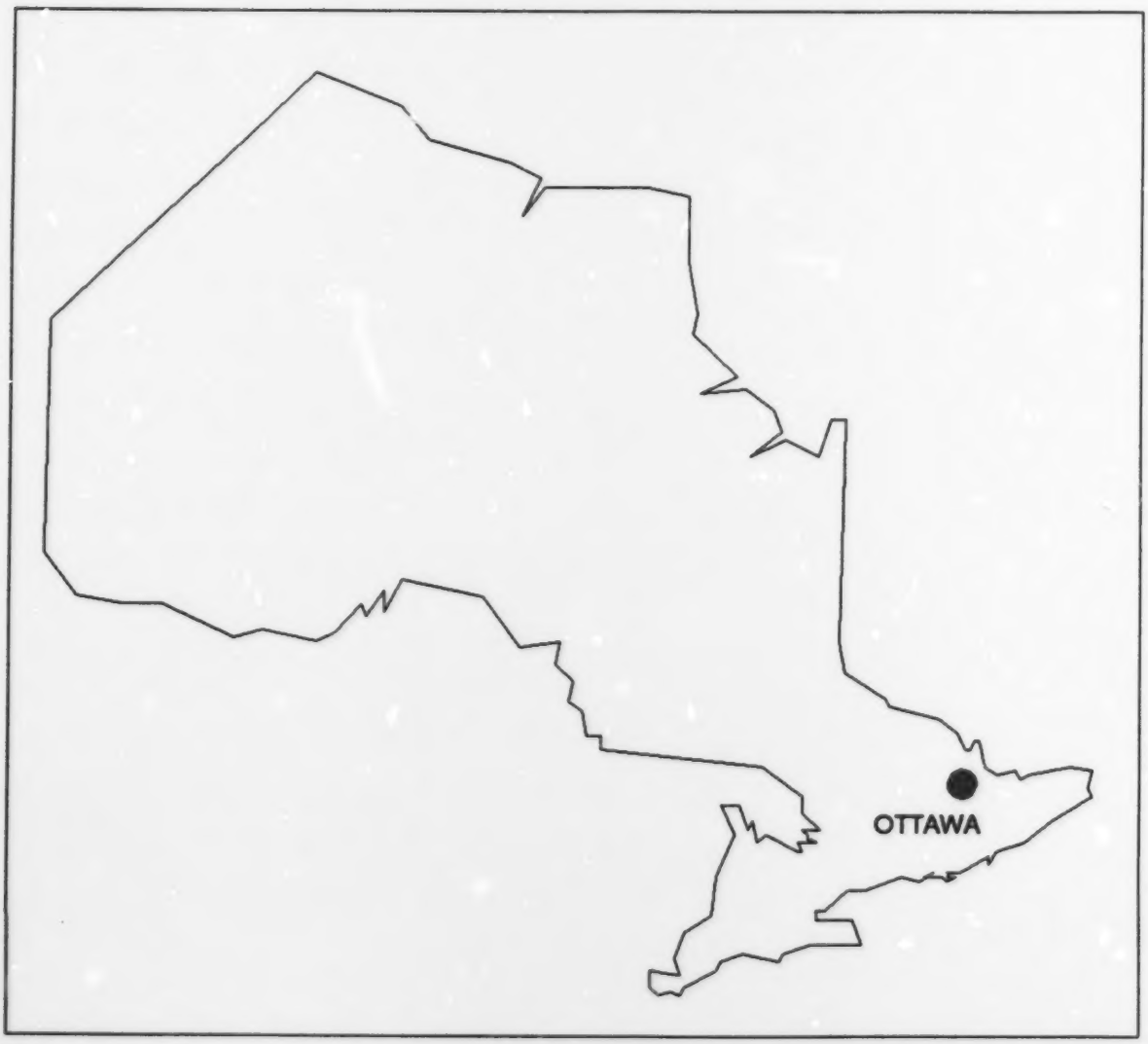

Figure 2

OTTAWA (BRITANNIA) WATER TREATMENT PLANT

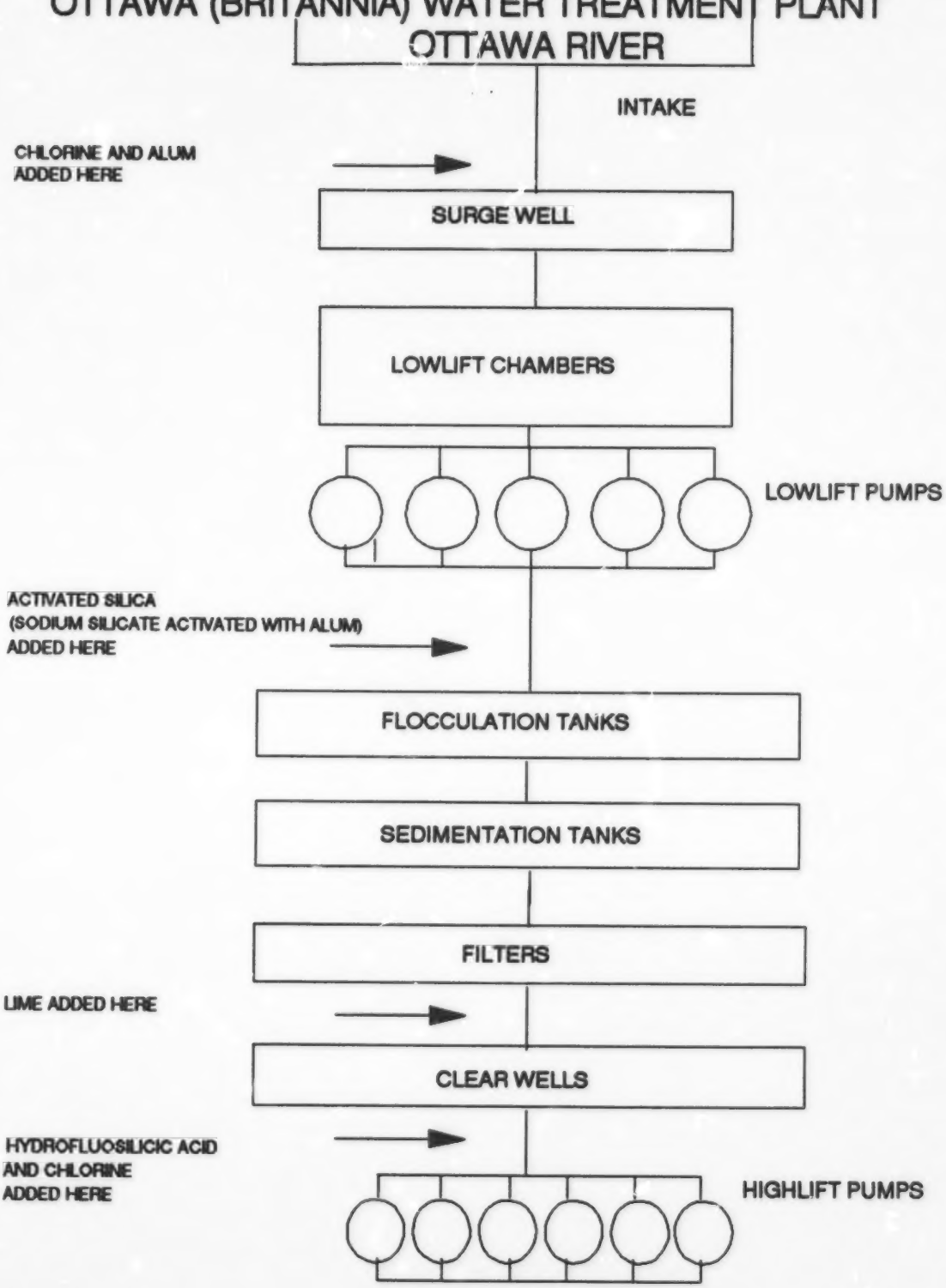

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

OTTAWA (BRITANNIA) WATER TREATMENT PLANT

LOCATION:	CASSELS ROAD OTTAWA, ONTARIO (613-828-2727)
SOURCE:	RAW WATER SOURCE - OTTAWA RIVER
RATED CAPACITY:	247 (1000 M3/DAY)
OPERATION:	MUNICIPAL
PLANT SUPERINTENDENT:	A. HARTRY
MINISTRY REGION:	SOUTHEASTERN
DISTRICT OFFICER:	MR. R.A. DUNN

MUNICIPALITY SERVED	POPULATION
CITY OF OTTAWA	304,000
GLOUCESTER	76,589
VANIER	18,877
NEPEAN	85,737
KANATA	20,529
GOULBOURN	9,720

plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and field measurements such as Turbidity, Chlorine Residuals, pH and Temperature were recorded on the day of sampling and were entered onto the DWSP data base as submitted.

RESULTS

The Ottawa (Britannia) Water Treatment Plant was sampled for approximately 160 parameters on a monthly basis.

The Specific Pesticides and Chlorophenols scans were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics are only analysed in the raw and treated water from the plant. As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for

volatiles is no longer valid after four weeks of storage, volatile results for January or February are not available.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 presents parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461 -X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occuring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable results as defined by established MOE laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is

repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present seven times in the treated water, six times in the distribution system Site 1 water and fourteen times in the Site 2 water. In all cases the positive parameters were Standard Plate Count and Total Coliform Background.

Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35^{0}C after 48 hours) in the ODWOs is 500 organisms per mL (based on a geometric mean of 5 or more samples). High Standard Plate Counts were present in the August and November Site 2 water samples. While no indicators of unsafe water were detected, the high Standard Plate Count may be indicative of a deterioration in conditions in the distribution system. A total Chlorine Residual of at least 0.05 mg/L was detected on both occasions however, water temperature became elevated during the summer months. The high Standard Plate Counts obtained for the month of August probably reflect increased bacteriological growth as a result of the increased temperature.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The results for the Laboratory Chemistry and Field Chemistry scans were below applicable health related ODWOs.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for the Ottawa (Britannia) water with the exception of April and May is negative.

As part of the treatment plant process, hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practised, the Fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. This level was generally not maintained. Table 3 indicates that the amount of hydrofluosilicic acid added was not sufficient to maintain a 1.2 mg/L Fluoride residual.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded eleven times in the treated water and free flow distributed water.

Calcium, Conductivity and Hardness levels increased in the treated water as compared to the raw water. These increases are a result of the addition of Calcium Oxide during the treatment process to adjust the final pH in the treated water.

Metals

The results reported for the Metals scan were below any applicable health related ODWOs.

Copper and Iron levels were generally lower in the treated water as compared to the raw water. This is a result of the treatment process. The addition of Alum as a coagulant to the raw water and the resulting coagulation/settling process has been shown to reduce the levels of most metals.

Elevated levels of Copper, Lead and Zinc were detected in the standing samples as compared to the free flow distribution samples thus, indicating that these metals were leached from the household plumbing as the water stood overnight. The Langelier Index indicates potential for corrosion and some metals will be leached in standing samples in most supplies.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid post precipitation problems. Aluminum values exceeded the ODWO operational guideline four times in the treated water.

Organic Parameters

Chloroaromatics

The results of the Chloroaromatics scan showed that one parameter was detected:

Hexachloroethane

Hexachloroethane was detected at trace levels, once in the treated water, twice in the Site 1 water and once in the Site 2 water.

Review of these results, along with past information from other water supplies on DWSP, would indicate that certain Chloroaromatics appear more frequently in the treated water than in the raw and almost always only at trace levels. These occurrences could possibly be due to a reaction of chlorine with organics present in the water or in the distribution system.

Chlorophenols

The results of the Chlorophenols scan showed that one parameter was detected:

2,4,6-Trichlorophenol

2,4,6-Trichlorophenol was detected at a trace level once in the treated water.

Pesticides and PCB (Polychlorinated Biphenyl)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (Benzene Hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer predominantly found in surface water from the Great Lakes Basin as indicated in results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, five times in the raw water, eight times in the treated water, eight times in the Site 1 water and seven times in the Site 2 water.

Lindane was detected at trace levels, once in the raw water, twice in the treated water, once in the Site 1 water and twice in the Site 2 water.

Specific Pesticides

Results of the Specific Pesticides scan showed that no parameters were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected at levels ranging from 1.0 ug/L to 9.6 ug/L in the raw and treated

water. Phenolics were detected at trace levels, four times in the raw water and five times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAH)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatiles scan showed that six parameters, other than Trihalomethanes(THMs), were detected:

- Benzene
- Toluene
- Ethylbenzene
- Meta and Para-Xylene
- Styrene
- Tetrachloroethylene

Benzene was detected at trace levels, once in the Site 1 water and Site 2 water.

Toluene was detected at trace levels, twice in the treated water and twice in both distribution system water samples. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical

technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of 0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, once in the raw water, four times in the treated water, five times in the Site 1 water and once in the Site 2 water.

Meta and Para-Xylene are measured as one compound, M-Xylene. They were detected at a trace level, once in the treated water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP usually at trace levels.

Tetrachloroethylene was detected at trace levels, once in the treated water, once in both the Site 1 and Site 2 sample.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Dichlorobromomethane and Total THMs were detected in all treated waters. Chlorodibromomethane was detected at trace levels, once in the raw water, three times in the treated water and twice in both the Site 1 and Site 2 water. All Total THM occurrences, ranging from 46.8 ug/L to 288.5 ug/L were below the ODWO of 350 ug/L.

THMs were present in three raw water samples taken in 1988 and in five raw water sample taken in 1987. This would indicate that low levels of chlorine were present in these samples.

CONCLUSIONS

The Ottawa (Britannia) Water Treatment plant for the sample year of 1988 produced good quality water at the plant and this was maintained in the distribution system.

No health related guidelines, for organic or inorganic parameters, were exceeded during 1986, 1987 or 1988.

RECOMMENDATIONS

Two recommendations can be made:

1) During 1988 three raw water samples contained THMs and in 1987 five raw water samples contained THMs. This sample site should be reassessed to ensure that it still meets the DWSP sampling protocol.

2) Hydrofluosilicic Acid dosages should be adjusted to ensure that the recommended fluoride level is maintained in the distributed water.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) SAMPLE DAY CONDITIONS FOR 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)						
			PRE-CHLORINATION	COAGULATION	COAGULATION AID	FLUORIDATION	ACTIVATION	POST PH ADJUSTMEN	POST-CHLORINATION
			CHLORINE	ALUM LIQUID	SODIUM SILICATE	HYDROFLUOSILICIC ACID	ALUM LIQUID	CALCIUM OXIDE	CHLORINE
DATE	RETENTION TIME(HRS)	FLOW (1000M3)							
JAN 27	4.5	109.0	1.60	34.00	1.50	.90	3.00	18.00	1.60
FEB 24	4.5	109.0	1.00	36.00	2.00	.90	4.00	17.00	1.00
MAR 30	5.2	95.0	1.00	36.00	2.00	.90	4.00	18.00	1.00
APR 26	5.4	91.0	1.00	30.00	2.00	.90	4.00	11.00	1.00
MAY 25	3.5	141.0	1.00	28.00	1.50	.90	3.00	12.00	1.00
JUN 29	3.5	141.0	2.00	26.00	1.00	.90	2.00	10.00	1.60
JUL 27	4.5	109.0	2.40	26.00	.75	.90	1.50	12.00	1.60
AUG 24	3.5	141.0	2.80	25.00	.75	1.00	1.50	15.00	1.60
SEP 28	3.5	141.0	2.80	25.00	.50	1.00	1.00	12.00	1.60
OCT 26	2.7	186.0	2.80	25.00	1.50	.90	3.00	13.00	1.60
NOV 30	6.5	77.0	1.80	29.00	1.25	1.00	2.50	13.00	1.60
DEC 20	3.8	131.0	1.20	29.00	1.25	.90	2.50	13.00	1.30

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	12	12	0	.	.	.	.	.	.	.	.	.
	STANDRD PLATE CNT MF	8	8	0	12	6	0	11	5	0	12	11	0
	P/A BOTTLE	.	.	.	8	0	0	7	0	0	8	0	0
	TOTAL COLIFORM MF	12	12	0	12	0	0	11	0	0	12	0	0
	T COLIFORM BCKGRD MF	12	12	0	12	1	0	11	1	0	12	3	0
*TOTAL SCAN BACTERIOLOGICAL		44	44	0	44	7	0	40	6	0	44	14	0
*TOTAL GROUP BACTERIOLOGICAL		44	44	0	44	7	0	40	6	0	44	14	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	12	12	0	18	18	0	19	19	0
	FLD CHLORINE FREE	.	.	.	12	12	0	16	16	0	12	12	0
	FLD CHLORINE (TOTAL)	.	.	.	12	12	0	22	22	0	21	21	0
	FLD PH	12	12	0	12	12	0	24	24	0	22	22	0
	FLD TEMPERATURE	12	12	0	11	11	0	24	24	0	22	22	0
	FLD TURBIDITY	12	12	0	12	12	0	24	24	0	24	24	0
*TOTAL SCAN CHEMISTRY (FLD)		36	36	0	71	71	0	128	128	0	120	120	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	22	22	0	22	22	0
	CALCIUM	12	12	0	12	12	0	23	23	0	23	23	0
	CYANIDE	12	0	0	12	0	0	12	0	0	12	0	0
	CHLORIDE	12	12	0	12	12	0	23	23	0	23	23	0
	COLOUR	12	12	0	12	10	2	24	21	3	22	20	2

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	CONDUCTIVITY	12	12	0	12	12	0	22	22	0	22	22	0
	FLUORIDE	12	8	4	12	12	0	22	22	0	22	22	0
	HARDNESS	12	12	0	12	12	0	23	23	0	23	23	0
	IONCAL	12	6	0	12	6	0	24	12	0	24	12	0
	LANGELIERS INDEX	2	2	0	2	2	0	2	2	0	4	4	0
	MAGNESIUM	12	12	0	12	12	0	23	23	0	23	23	0
	SODIUM	12	12	0	12	12	0	23	23	0	23	23	0
	AMMONIUM TOTAL	12	11	1	12	10	1	22	14	8	22	17	5
	NITRITE	12	10	2	12	1	11	22	5	17	22	8	14
	TOTAL NITRATES	12	12	0	12	12	0	22	21	1	22	20	2
	NITROGEN TOT KJELD	12	12	0	12	11	1	22	22	0	22	22	0
	PH	12	12	0	12	12	0	22	22	0	22	22	0
	PHOSPHORUS FIL REACT	12	7	4	12	10	2	.	.	.	.	.	.
	PHOSPHORUS TOTAL	12	9	3	12	9	2	.	.	.	.	.	.
	SULPHATE	6	6	0	6	6	0	12	12	0	12	12	0
	TURBIDITY	12	12	0	12	12	0	22	22	0	22	21	1
*TOTAL SCAN CHEMISTRY (LAB)		236	203	14	236	197	19	387	334	29	387	339	24
METALS	SILVER	12	0	5	12	0	6	24	0	10	24	0	8
	ALUMINUM	12	12	0	12	12	0	24	24	0	24	24	0
	ARSENIC	12	1	11	12	0	12	24	0	24	24	0	24
	BARIUM	12	12	0	12	12	0	24	24	0	24	24	0
	BORON	12	0	12	12	0	12	24	0	24	24	0	24

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	BERYLLIUM	12	0	7	12	0	7	24	0	13	24	0	13
	CADMIUM	12	0	2	12	0	2	24	0	4	24	0	8
	COBALT	12	1	11	12	3	9	24	0	24	24	0	24
	CHROMIUM	12	2	10	12	2	9	24	9	14	24	2	21
	COPPER	12	12	0	12	7	5	24	24	0	24	24	0
	IRON	12	12	0	12	0	12	24	0	23	24	0	22
	MERCURY	12	4	3	12	4	2	12	4	4	12	9	2
	MANGANESE	12	12	0	12	12	0	24	24	0	24	24	0
	MOLYBDENUM	12	0	12	12	0	12	24	0	24	24	0	24
	NICKEL	12	0	11	12	0	11	24	3	17	24	8	14
	LEAD	12	12	0	12	0	11	24	21	3	24	24	0
	ANTIMONY	12	3	9	12	3	9	24	7	17	24	7	17
	SELENIUM	12	0	8	12	0	9	24	0	12	24	0	9
	STRONTIUM	12	12	0	12	12	0	24	24	0	24	24	0
	TITANIUM	12	12	0	12	12	0	24	24	0	24	24	0
	THALLIUM	12	0	4	12	0	4	24	0	7	24	0	7
	URANIUM	12	0	12	12	0	9	24	0	20	24	0	16
	VANADIUM	12	5	7	12	12	0	24	24	0	24	24	0
	ZINC	12	12	0	12	12	0	24	24	0	24	24	0
*TOTAL SCAN METALS		288	124	124	288	103	141	564	236	240	564	242	233
*TOTAL GROUP INORGANIC & PHYSICAL		560	363	138	595	371	160	1079	698	269	1071	701	257
CHLOROAROMATICS	HEXACHLOROBUTADIENE	10	0	0	11	0	0	10	0	0	11	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	123 TRICHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	1234 T-CHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	1235 T-CHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	124 TRICHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	1245 T-CHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	135 TRICHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	HCB	10	0	0	11	0	0	10	0	0	11	0	0
	HEXACHLOROETHANE	10	0	0	11	0	1	10	0	2	11	0	1
	OCTACHLOROSTYRENE	10	0	0	11	0	0	10	0	0	11	0	0
	PENTACHLOROBENZENE	10	0	0	11	0	0	10	0	0	11	0	0
	236 TRICHLOROTOLUENE	10	0	0	11	0	0	10	0	0	11	0	0
	245 TRICHLOROTOLUENE	10	0	0	11	0	0	10	0	0	11	0	0
	26A TRICHLOROTOLUENE	10	0	0	11	0	0	10	0	0	11	0	0
*TOTAL SCAN CHLOROAROMATICS		140	0	0	154	0	1	140	0	2	154	0	1
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	1	.	.	.	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	1	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(A) PYRENE	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.	.	.
*TOTAL SCAN PAH		204	0	0	204	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	10	0	0	11	0	0	10	0	0	11	0	0
	ALPHA BHC	10	0	5	11	0	8	10	0	8	11	0	7

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	BETA BHC	10	0	0	11	0	0	10	0	0	11	0	0
	LINDANE	10	0	1	11	0	2	10	0	1	11	0	2
	ALPHA CHLORDANE	10	0	0	11	0	0	10	0	0	11	0	0
	GAMMA CHLORDANE	10	0	0	11	0	0	10	0	0	11	0	0
	DIELDRIN	10	0	0	11	0	0	10	0	0	11	0	0
	METHOXYCHLOR	10	0	0	11	0	0	10	0	0	11	0	0
	ENDOSULFAN 1	10	0	0	11	0	0	10	0	0	11	0	0
	ENDOSULFAN II	10	0	0	11	0	0	10	0	0	11	0	0
	ENDRIN	10	0	0	11	0	0	10	0	0	11	0	0
	ENDOSULFAN SULPHATE	10	0	0	11	0	0	10	0	0	11	0	0
	HEPTACHLOR EPOXIDE	10	0	0	11	0	0	10	0	0	11	0	0
	HEPTACHLOR	10	0	0	11	0	0	10	0	0	11	0	0
	MIREX	10	0	0	11	0	0	10	0	0	11	0	0
	OXYCHLORDANE	10	0	0	11	0	0	10	0	0	11	0	0
	OPDDT	10	0	0	11	0	0	10	0	0	11	0	0
	PCB	10	0	0	11	0	0	10	0	0	11	0	0
	DDD	10	0	0	11	0	0	10	0	0	11	0	0
	PPDDE	10	0	0	11	0	0	10	0	0	11	0	0
	PPDDT	10	0	0	11	0	0	10	0	0	11	0	0
	AMETRINE	12	0	0	12	0	0	12	0	0	12	0	0
	ATRAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	ATRATONE	12	0	0	12	0	0	12	0	0	12	0	0
	CYANAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0	6	0	0	6	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0	6	0	0	6	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
PESTICIDES & PCB	PROMETONE	12	0	0	12	0	0	12	0	0	12	0	0
	PROPAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	PROMETRYNE	12	0	0	12	0	0	12	0	0	12	0	0
	METRIBUZIN	12	0	0	12	0	0	12	0	0	12	0	0
	SIMAZINE	12	0	0	12	0	0	12	0	0	12	0	0
	ALACHLOR	12	0	0	12	0	0	12	0	0	12	0	0
	METOLACHLOR	12	0	0	12	0	0	12	0	0	12	0	0
*TOTAL SCAN PESTICIDES & PCB		354	0	6	375	0	10	354	0	9	375	0	9
PHENOLICS	PHENOLICS	11	6	4	12	6	5	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		11	6	4	12	6	5	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0	0	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.	.	.	.
	24DCHLRPHENOXYBUTYRC	2	0	0	2	0	0	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
SPECIFIC PESTICIDES	DICHLOROVOS	2	0	0	2	0	0	.	.	.	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.
	BENOMYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUX	2	0	0	2	0	0	.	.	.	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.	.	.	.
	CICP	2	0	0	2	0	0	.	.	.	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.	.	.	.
	IPC	2	0	0	2	0	0	.	.	.	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		56	0	0	56	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

		SITE											
		RAW			TREATED			SITE 1			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	BENZENE	10	0	0	10	0	0	9	0	1	10	0	1
	TOLUENE	10	0	0	10	1	1	9	0	2	10	1	1
	ETHYLBENZENE	10	0	1	10	0	4	9	0	5	10	0	1
	P-XYLENE	10	0	0	9	0	0	9	0	0	10	0	0
	M-XYLENE	10	0	0	10	0	1	9	0	0	10	0	0
	O-XYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	STYRENE	4	0	3	4	0	4	4	0	4	4	0	4
	1,1 DICHLOROETHYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	METHYLENE CHLORIDE	10	0	0	10	0	0	9	0	0	10	0	0
	T1,2DICHLOROETHYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	1,1 DICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLOROFORM	9	2	5	9	9	0	8	8	0	9	9	0
	111, TRICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CARBON TETRACHLORIDE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROPROPANE	10	0	0	10	0	0	9	0	0	10	0	0
	TRICHLOROETHYLENE	10	0	0	10	0	0	9	0	0	10	0	0
	DICHLOROBROMOMETHANE	10	0	2	9	9	0	8	8	0	9	9	0
	112 TRICHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLORODIBROMOMETHANE	10	0	1	10	0	3	9	0	2	10	0	2
	T-CHLOROETHYLENE	10	0	0	10	0	1	9	0	1	10	0	2
	BROMOFORM	10	0	0	10	0	0	9	0	0	10	0	0
	1122 T-CHLOROETHANE	10	0	0	10	0	0	9	0	0	10	0	0
	CHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	1,4 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA (BRITANNIA)

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	1,3 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	1,2 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0	10	0	0
	TRIFLUOROCHLOROTOLUE	3	0	0	3	0	0	2	0	0	3	0	0
	ETHLYENE DIBROMIDE	10	0	0	10	0	0	9	0	0	10	0	0
	TOTL TRIHALOMETHANES	9	0	3	9	9	0	8	8	0	9	9	0
*TOTAL SCAN VOLATILES		285	2	15	283	28	14	255	24	15	284	28	11
*TOTAL GROUP ORGANIC		1062	8	25	1096	34	31	749	24	26	813	28	21
TOTAL		1666	415	163	1735	412	191	1868	728	295	1928	743	278

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL						
FECAL COLIFORM MF (CT/100ML)		**DET'N LIMIT = 0**		**GUIDELINE = 0 (A1)**		
JAN	11	.	.	.	.	.
FEB	15	.	.	.	.	.
MAR	5	.	.	.	.	.
APR	1	.	.	.	.	.
MAY	14	.	.	.	.	.
JUN	12	.	.	.	.	.
JUL	9	.	.	.	.	.
AUG	218	.	.	.	.	.
SEP	192 R72	.	.	.	.	.
OCT	52 T48	.	.	.	.	.
NOV	44	.	.	.	.	.
DEC	30 T48	.	.	.	.	.
STANDRD PLATE CNT MF (CT/ML)		**DET'N LIMIT = 0**		**GUIDELINE = 500/ML (A1)**		
JAN	780	1	.	0	.	2
FEB	1400	9	.	0	.	2
MAR	1300	2	.	1	.	21
APR	620	2	.	7	.	32
MAY	500	4	.	.	.	119
JUN	780	0	.	0	.	125
JUL	7000	0	.	0	.	24
AUG	2400 >	10	.	39	.	1100
SEP	.	6 <=>	.	70 <=>	.	13 T06
OCT	.	2 <=>	.	37 T24	.	23 T06
NOV	.	0 <=>	.	73 T48	.	2400 >
DEC	.	1 <=>	.	3 <=>	.	1 <=>
P/A BOTTLE ( )		**DET'N LIMIT = 0**		**GUIDELINE = 0 (A1*)**		
JAN	.	0	.	0	.	0
FEB	.	0	.	0	.	0
MAR	.	0	.	0	.	0
APR	.	0	.	0	.	0
MAY	.	0	.	.	.	0
JUN	.	0	.	0	.	0
JUL	.	0	.	0	.	0
AUG	.	0	.	0	.	0
TOTAL COLIFORM MF (CT/100ML)		**DET'N LIMIT = 0**		**GUIDELINE = 5/100ML(A1)**		
JAN	58	0	.	0	.	0
FEB	74 A3C	0	.	0	.	0
MAR	1100	0	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	SITE		SITE 1		SITE 2	
	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
TYPE						
APR	68 A3C	0	.	0	.	0
MAY	25 A3C	0	.	.	.	0
JUN	1200	0	.	0	.	0
JUL	120 A3C	0	.	0	.	0
AUG	1700 A3C	0	.	0	.	0
SEP	360 A3C	0 T48	.	0 T24	.	0 T06
OCT	160 A3C	0 T48	.	0 T24	.	0 T06
NOV	200	0	.	0 T48	.	0 T24
DEC	140 A3C	0 T48	.	0 T24	.	0 T06
T COLIFORM BCKGRD MF (CT/100ML)		DET'N LIMIT = 0		GUIDELINE = N/A		
JAN	210	0	.	0	.	0
FEB	240	0	.	0	.	0
MAR	1900	0	.	0	.	0
APR	660	0	.	0	.	0
MAY	1770	0	.	.	.	0
JUN	3900	0	.	0	.	540
JUL	6700	0	.	0	.	143
AUG	50000	3	.	0	.	900
SEP	21000 A3C	0 T48	.	0 T24	.	0 T06
OCT	24000 >	0 T48	.	1 T24	.	0 T06
NOV	1000	0	.	0 T48	.	0 T24
DEC	1320 T48	0 T48	.	0 T24	.	0 T06

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)						
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	.200	.050	.200	.050	.100
FEB	.	.700	.	.100	.	.200
MAR	.	.200	.	.150	.	.100
APR	.	.100	.050	.050	.050	.050
MAY	.	.700	.050	.050	.050	.050
JUN	.	.400	.100	.100	.100	.100
JUL	.	.500	.100	.100	.050	.150
AUG	.	.500	.050	.100	.050	.050
SEP	.	.400	.100	.100	.100	.100
OCT	.	.200	.	.100	.	.100
NOV	.	.200	.	.	.	.050
DEC	.	.200	.	.050	.	.050
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	1.300	.	.300	.	.100
FEB	.	.300	.100	.450	.100	.200
MAR	.	.900	.050	.200	.	.100
APR	.	.900	.	.100	.050	.050
MAY	.	.500	.	.050	.	.
JUN	.	1.300	.100	.100	.100	.100
JUL	.	1.100	.	.150	.	.
AUG	.	1.100	.050	.150	.	.050
SEP	.	1.300	.050	.100	.	.050
OCT	.	1.500	.	.100	.	.
NOV	.	1.500	.	.	.	.100
DEC	.	1.100	.	.050	.	.100
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.	1.500	.050	.500	.050	.200
FEB	.	1.000	.100	.550	.100	.400
MAR	.	1.100	.050	.350	.	.200
APR	.	1.000	.050	.150	.100	.100
MAY	.	1.200	.050	.100	.050	.050
JUN	.	1.700	.100	.100	.100	.100
JUL	.	1.600	.100	.250	.050	.150
AUG	.	1.600	.100	.250	.050	.100
SEP	.	1.700	.150	.200	.100	.150
OCT	.	1.700	.100	.200	.100	.150
NOV	.	1.700	.	.100	.	.150
DEC	.	1.300	.	.100	.	.150
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM	
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	7.100	7.700	7.900	8.100	7.700	7.900
FEB	7.100	8.000	8.000	8.300	8.000	8.400
MAR	7.100	7.900	7.600	8.100	7.300	7.900
APR	7.300	8.100	7.500	7.600	7.600	8.000
MAY	7.200	8.000	7.300	7.800	7.500	7.800
JUN	7.200	8.300	7.700	8.300	8.000	7.900
JUL	7.300	8.300	7.700	7.800	.	.
AUG	7.200	7.800	7.500	7.700	7.800	7.900
SEP	6.900	8.400	7.500	7.800	7.700	8.000
OCT	7.300	8.400	7.700	7.700	8.300	8.300
NOV	7.300	8.400	7.600	7.900	7.700	7.900
DEC	7.100	8.400	7.900	7.900	7.600	7.900
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	2.800	1.500	25.000	10.000	22.000	7.000
FEB	3.000	1.900	26.000	9.000	22.000	6.000
MAR	3.000	2.200	25.000	6.000	22.000	6.000
APR	7.400	6.000	24.000	12.000	13.000	7.000
MAY	11.000	15.000	23.000	13.000	22.000	12.000
JUN	20.000	20.000	24.000	14.000	22.000	16.000
JUL	26.000	25.000	26.000	18.000	.	.
AUG	22.500	23.500	25.000	20.000	21.000	20.000
SEP	18.000	17.500	22.000	18.000	21.000	18.000
OCT	10.500	10.000	25.000	16.000	24.000	15.000
NOV	6.000	.	26.000	13.000	23.000	10.000
DEC	3.000	1.000	25.000	11.500	24.000	9.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	1.300	.490	.190	.280	.240	.510
FEB	2.200	.510	.260	.220	.650	.260
MAR	2.900	.630	.240	.200	.580	.200
APR	4.400	.480	.520	.180	.400	.150
MAY	2.700	.380	.540	.200	.500	.200
JUN	3.600	.350	.300	.220	.360	.180
JUL	1.600	.530	.340	.270	.680	.280
AUG	2.300	.480	.210	.170	.410	.190
SEP	2.000	.560	.390	.200	.420	.200
OCT	2.900	.410	.170	.140	.480	.400
NOV	3.700	.510	.210	.260	.450	.310
DEC	3.600	.370	.210	.160	.550	.260

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)						
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	25.900	27.000	32.600	33.000	!!S	32.000
FEB	26.300	30.900	35.000	34.300	34.600	34.600
MAR	27.500	31.700	34.300	33.900	34.500	33.500
APR	23.000	24.500	31.200	!!S	28.200	27.800
MAY	22.600	24.800	26.600	!!S	27.000	26.600
JUN	19.800	25.000	24.400	26.300	26.200	!RE
JUL	20.000	22.000	24.200	24.000	24.300	26.500
AUG	20.500	23.300	25.000	24.100	26.300	26.100
SEP	21.400	25.000	24.800	23.800	25.500	25.100
OCT	19.700	22.500	24.100	23.700	25.800	24.800
NOV	22.300	25.700	26.000	25.800	26.800	26.000
DEC	21.600	24.600	26.700	26.200	27.200	27.400
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	9.800	19.800	22.200	22.200	22.400	21.000
FEB	9.600	20.800	21.800	21.600	22.200	21.000
MAR	9.800	20.400	21.800	21.800	20.800	21.600
APR	8.600	14.000	15.400	!!S	16.400	17.600
MAY	9.200	17.200	17.800	17.600	18.000	18.400
JUN	7.800	17.800	17.200	18.200	18.200	!RE
JUL	8.300	16.400	16.600	16.800	17.600	16.800
AUG	8.200	17.800	18.400	18.000	19.400	18.800
SEP	8.840	19.000	18.300	18.000	18.800	18.400
OCT	8.600	18.000	19.000	19.000	19.200	18.800
NOV	8.200	18.600	17.200	18.000	18.600	19.000
DEC	10.000	17.000	17.200	19.200	18.400	19.000
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	3.200	5.800	5.700	5.600	5.800	5.600
FEB	3.000	4.600	4.800	4.600	4.400	4.300
MAR	3.200	4.800	4.900	4.700	4.600	4.600
APR	2.800	4.000	4.100	!!S	3.800	3.800
MAY	2.200	4.400	4.200	4.300	4.200	4.000
JUN	2.100	5.400	6.000	5.400	5.400	!RE
JUL	2.600	5.900	6.200	6.100	6.200	6.200
AUG	2.300	6.300	6.400	6.400	6.400	6.400
SEP	1.800	5.500	5.500	5.500	5.500	5.500
OCT	2.100	5.800	6.300	6.200	6.700	6.200
NOV	2.300	5.200	5.500	5.300	5.600	5.400
DEC	1.900	3.500	4.100	4.200	3.900	4.100
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	33.500	2.500	4.000	4.000	IIS	3.500
FEB	32.500	3.500	5.000	4.000	5.000	4.000
MAR	32.500	3.500	9.000	4.000	4.000	3.500
APR	17.500	2.000 <T	2.000 <T	1.000 <T	1.500 <T	.500 <T
MAY	32.000	4.000	.500	.500	4.500	4.500
JUN	27.500	3.500	3.000	3.000	3.500	IRE
JUL	24.500	3.000	3.500	3.000	3.000	3.000
AUG	25.000	2.000 <T	3.000	2.000 <T	2.500	2.500
SEP	29.500	3.000	3.000	3.000	3.000	3.500
OCT	36.000	4.000	5.000	4.500	5.000	4.500
NOV	39.000	3.000	2.500	2.500	2.500	2.500
DEC	34.500	3.000	4.000	3.000	3.500	3.000
CONDUCTIVITY (UMHO/CM)		DET'N LIMIT = 1		GUIDELINE = 400 (F2)		
JAN	88	151	160	162	IIS	160
FEB	90	152	160	159	158	158
MAR	91	152	158	156	157	154
APR	81	127	141	IIS	138	136
MAY	78	127	132	IIS	132	131
JUN	72	129	131	132	133	IRE
JUL	72	156	132	129	131	133
AUG	73	129	133	129	133	134
SEP	73	133	131	132	134	133
OCT	74	129	133	132	137	134
NOV	81	138	139	138	141	139
DEC	74	127	132	133	133	133
FLUORIDE (MG/L)		DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)		
JAN	.040 <T	1.180	1.080	1.080	IIS	1.040
FEB	.060	1.060	1.020	1.060	1.000	.980
MAR	.050	.820	.870	.870	.870	.870
APR	.050	.870	.910	IIS	.910	.870
MAY	.050	.860	.920	IIS	.920	.920
JUN	.060	.950	.970	.920	.940	IRE
JUL	.040 <T	.930	.940	.940	.920	.920
AUG	.020 <T	.820	1.000	1.000	.960	.940
SEP	.040 <T	.920	1.020	.960	1.020	1.020
OCT	.040	.900	.840	.900	.920	.920
NOV	.060	1.080	1.080	1.100	.920	.980
DEC	.060	.920	.980	.940	.940	.940
HARDNESS (MG/L)		DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)		
JAN	34.000	59.000	65.000	65.000	65.000	61.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	34.000	63.000	65.000	65.000	66.000	62.000
MAR	35.000	62.000	65.000	65.000	61.000	65.000
APR	29.000	40.000	44.000	IIS	48.000	51.000
MAY	31.000	52.000	53.000	53.000	53.000	54.000
JUN	28.000	54.000	51.000	54.000	54.000	IRE
JUL	28.500	49.000	49.000	49.000	[illegible].000	48.000
AUG	29.000	53.000	55.000	55.000	57.000	55.000
SEP	30.900	58.000	53.200	55.000	57.000	55.000
OCT	30.000	53.000	56.000	55.000	56.000	55.000
NOV	30.000	56.000	51.000	53.000	53.000	55.000
DEC	30.000	52.000	52.000	57.000	55.000	57.000
IONCAL (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
FEB	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
APR	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAY	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUN	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUL	3.543	.811	4.408	.700	2.942	6.113
AUG	2.376	6.702	7.202	8.916	8.055	5.370
SEP	2.804	9.168	2.499	7.759	7.558	6.030
OCT	4.950	5.508	7.006	5.037	2.763	2.775
NOV	6.205	.799	7.124	.357	3.993	1.202
DEC	6.244	8.718	7.743	2.971	.043	.237
LANGELIERS INDEX (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A	
JAN	-1.458 NAF	-1.223 NAF	-.905 NAF	-.900 NAF	.	-.997 NAF
FEB	-1.621 NAF	-.773 NAF	-.602 NAF	-.604 NAF	-.428 NAF	-.192 NAF
MAR	-1.463 NAF	-.650 NAF	-.610 NAF	-.264 NAF	-.547 NAF	-.543 NAF
APR	1.413 NAF	1.114 NAF	.724 NAF	.	1.020 NAF	.954 NAF
MAY	1.530 NAF	1.020 NAF	1.067 NAF	.	1.005 NAF	.962 NAF
JUN	-1.616 NAF	-.752 NAF	-1.019 NAF	-.872 NAF	-.984 NAF	.
JUL	-1.545	-.916	-1.098	-1.095	-1.060	-1.014
AUG	-1.520	-1.023	-1.000	-1.023	-.965	-.912
SEP	-1.488	-.356	-.935	-.910	-.882	-.768
OCT	-1.587	-.983	-.972	-.948	-.909	-.894
NOV	-1.507	-1.035	-1.045	-1.038	-.978	-.991
DEC	-1.541	-.888	-.830	-.911	-.953	-.896
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)	
JAN	2.200	2.300	2.300	2.200	2.200	2.100
FEB	2.500	2.600	2.600	2.600	2.500	2.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
MAR	2.700	2.700	2.600	2.700	2.300	2.700
APR	1.800	1.300	1.400	IIS	1.500	1.700
MAY	2.100	2.200	2.200	2.200	1.900	2.100
JUN	2.100	2.200	2.100	2.100	2.100	IRE
JUL	1.900	1.900	1.900	1.800	1.700	1.500
AUG	2.100	2.100	2.200	2.200	2.000	2.000
SEP	2.150	2.500	1.830	2.500	2.400	2.300
OCT	2.100	2.000	2.100	1.900	2.000	2.000
NOV	2.200	2.200	1.800	2.100	1.700	1.900
DEC	2.200	2.300	2.300	2.300	2.200	2.200
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	2.600	3.000	3.200	2.800	3.000	2.800
FEB	2.800	3.200	3.800	3.400	3.200	3.200
MAR	2.800	3.200	3.400	2.800	2.800	3.400
APR	1.800	1.600	2.200	IIS	1.800	2.000
MAY	1.800	2.200	2.400	2.400	1.600	1.800
JUN	2.000	2.200	2.400	2.400	2.400	IRE
JUL	2.200	2.400	2.600	2.400	2.600	2.600
AUG	2.400	2.600	2.800	3.000	2.600	2.600
SEP	2.200	2.400	2.550	2.400	2.400	2.400
OCT	2.400	2.800	2.800	2.400	2.800	2.400
NOV	1.800	2.000	2.400	2.400	2.400	2.200
DEC	2.000	2.400	2.400	2.400	2.400	2.400
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.036	.016	.012	.010	IIS	.008 <T
FEB	.074	.044	.048	.066	.052	.062
MAR	.008 <T	.030	.028	.048	.012	.034
APR	.036	.018	.022	IIS	.020	.026
MAY	.030	.010	.016	IIS	.002 <T	.012
JUN	.032	.012	.004 <T	.008 <T	.004 <T	IRE
JUL	.010	.016	.130	.010	.032	.028
AUG	.012	BDL	.004 <T	.002 <T	.028	.002 <T
SEP	.016	.016	.018	.018	.018	.024
OCT	.012	.008 <T	.006 <T	.004 <T	.002 <T	.014
NOV	.066	.012	.008 <T	.008 <T	.012	.016
DEC	.014	.014	.028	.026	.048	.058
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	.022	.002 <T	.002 <T	.002 <T	IIS	.002 <T
FEB	.005	.002 <T	.003 <T	.003 <T	.003 <T	.003 <T
MAR	.083	.002 <T	.00[illegible] <T	.004 <T	.001 <T	.003 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
APR	.023	.002 <T	.009	!!S	.002 <T	.002 <T
MAY	.009	.003 <T	.006	!!S	.002 <T	.010
JUN	.006	.002 <T	.002 <T	.002 <T	.002 <T	!RE
JUL	.004 <T	.003 <T	.005	.003 <T	.008	.012
AUG	.003 <T	.002 <T	.002 <T	.001 <T	.013	.002 <T
SEP	.010	.002 <T	.005	.003 <T	.007	.006
OCT	.010	.006	.005	.003 <T	.006	.005
NOV	.009	.002 <T	.004 <T	.003 <T	.002 <T	.001 <T
DEC	.016	.002 <T	.003 <T	.001 <T	.003 <T	.002 <T
TOTAL NITRATES (MG/L)		DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)		
JAN	.340	.440	.325	.285	!!S	.325
FEB	.215	.210	.230	.220	.240	.225
MAR	.330	.250	.270	.260	.305	.245
APR	.225	.210	.230	!!S	.220	.220
MAY	.180	.175	.230	!!S	.225	.190
JUN	.145	.135	.140	.130	.170	!RE
JUL	.240	.210	.720	.080 <T	.100	.095 <T
AUG	.135	.125	.125	.125	.095 <T	.110
SEP	.255	.250	.240	.230	.255	.230
OCT	.285	.280	.285	.270	.290	.270
NOV	.235	.235	.220	.210	.225	.210
DEC	.240	.200	.195	.175	.185	.165
NITROGEN TOT KJELD (MG/L)		DET'N LIMIT = .020		GUIDELINE = N/A		
JAN	.350	.190	.210	.190	!!S	.160
FEB	.370	.220	.240	.190	.220	.200
MAR	.310	.080 <T	.230	.210	.180	.190
APR	.330	.210	.180	!!S	.190	.180
MAY	.330	.170	.240	!!S	.180	.180
JUN	.310	.140	.140	.140	.180	!!S
JUL	.280	.180	.180	.160	.160	.170
AUG	.300	.140	.150	.140	.220	.220
SEP	.320	.170	.220	.180	.200	.160
OCT	.340	.200	.170	.180	.210	.190
NOV	.330	.150	.160	.140	.150	.150
DEC	.310	.130	.130	.150	.170	.170
PH (DIMSLESS)		DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)		
JAN	7.490	7.430	7.620	7.620	!!S	7.560
FEB	7.330	7.800	7.900	7.910	8.070	8.330
MAR	7.460	7.920	7.900	8.250	7.980	7.980
APR	7.640	7.720	7.970	!!S	7.690	7.730

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	7.500	7.720	7.630	!!S	7.680	7.720
JUN	7.540	7.970	7.730	7.820	7.710	!RE
JUL	7.580	7.910	7.670	7.670	7.680	7.710
AUG	7.600	7.730	7.710	7.710	7.700	7.770
SEP	7.580	8.340	7.780	7.830	7.810	7.940
OCT	7.530	7.780	7.740	7.770	7.770	7.810
NOV	7.580	7.660	7.680	7.670	7.700	7.690
DEC	7.470	7.860	7.880	7.760	7.720	7.760
PHOSPHORUS FIL REACT (MG/L)		DET'N LIMIT = .0005		GUIDELINE = N/A		
JAN	.000 <T	.006	.	.	.	.
FEB	BDL	.007	.	.	.	.
MAR	.003	.010	.	.	.	.
APR	.003	.006	.	.	.	.
MAY	.003	.006	.	.	.	.
JUN	.004	.007	.	.	.	.
JUL	.006	.000 <T	.	.	.	.
AUG	.002 <T	.004	.	.	.	.
SEP	.002	.004	.	.	.	.
OCT	.001 <T	.003	.	.	.	.
NOV	.002 <T	.005	.	.	.	.
DEC	.002	.002 <T	.	.	.	.
PHOSPHORUS TOTAL (MG/L)		DET'N LIMIT = .002		GUIDELINE = .40 (F2)		
JAN	.007 <T	.016	.	.	.	.
FEB	.010	.014	.	.	.	.
MAR	.010	.008 <T	.	.	.	.
APR	.010	.012	.	.	.	.
MAY	.013	.013	.	.	.	.
JUN	.012	.010	.	.	.	.
JUL	.007 <T	BDL	.	.	.	.
AUG	.014	.010	.	.	.	.
SEP	.012	.013	.	.	.	.
OCT	.010	.008 <T	.	.	.	.
NOV	.009 <T	.010	.	.	.	.
DEC	.015	.010	.	.	.	.
SULPHATE ( )		DET'N LIMIT = .200		GUIDELINE = 500. (A3)		
JUL	9.610	21.600	21.400	21.200	20.800	20.700
AUG	8.970	21.500	21.600	21.100	21.200	21.300
SEP	9.530	23.000	23.000	22.800	22.600	22.600
OCT	9.620	23.510	23.130	23.190	23.310	23.300
NOV	9.000	24.500	24.000	24.000	24.500	24.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT				DISTRIBUTION SYSTEM		
SITE TYPE	RAW	TREATED	SITE 1		SITE 2		
			STANDING	FREE FLOW	STANDING	FREE FLOW	
DEC	10.580	30.610	27.830	27.010	25.950	26.860	
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)		
JAN	1.160	.320	.350	.150	!!S	.210	
FEB	1.690	.180	.290	.110	.280	.090	<T
MAR	2.000	.180	.490	.110	.290	.160	
APR	3.300	.260	.360	!!S	.260	.160	
MAY	2.000	.210	.530	!!S	.290	.200	
JUN	2.800	.180	.150	.100	.210	!RE	
JUL	1.200	.260	.450	.230	.340	.290	
AUG	1.870	.240	.250	.130	.250	.240	
SEP	1.440	.430	.450	.470	.460	.310	
OCT	1.090	.660	.360	.440	.420	.460	
NOV	1.980	.940	.530	.590	.550	.610	
DEC	3.200	.280	.270	.260	.540	.270	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
METALS						
SILVER (UG/L)			DET'N LIMIT = .020		GUIDELINE = 50. (A1)	
JAN	BDL	BDL	.040 <T	.020 <T	.020 <T	BDL
FEB	.020 <T	.020 <T	.020 <T	.070 <T	.040 <T	.020 <T
MAR	.030 <T	.030 <T	BDL	.030 <T	.030 <T	.020 <T
APR	.030 <T	.210 <T	.050 <T	BDL	BDL	BDL
MAY	.030 <T	.030 <T	BDL	BDL	BDL	BDL
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	BDL	.110 <T	.040 <T	.030 <T	.040 <T	BDL
AUG	BDL	BDL	BDL	.030 <T	BDL	BDL
SEP	.040 <T	.030 <T	BDL	BDL	.030 <T	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	.040 <T	BDL	.090 <T
ALUMINUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100.(A4)	
JAN	76.000	160.000	170.000	150.000	170.000	170.000
FEB	110.000	88.000	95.000	82.000	100.000	84.000
MAR	93.000	82.000	110.000	87.000	110.000	85.000
APR	160.000	54.000	83.000	63.000	77.000	68.000
MAY	91.000	45.000	71.000	55.000	74.000	63.000
JUN	150.000	56.000	73.000	74.000	69.000	64.000
JUL	61.000	53.000	60.000	62.000	70.000	69.000
AUG	100.000	55.000	61.000	53.000	67.000	67.000
SEP	60.000	110.000	84.000	88.000	90.000	89.000
OCT	96.000	97.000	100.000	90.000	120.000	95.000
NOV	150.000	110.000	110.000	100.000	120.000	100.000
DEC	100.000	120.000	110.000	100.000	110.000	97.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50.0 (A1)	
JAN	.800 <T	.630 <T	.680 <T	.630 <T	.570 <T	.520 <T
FEB	.910 <T	.550 <T	.590 <T	.500 <T	.530 <T	.560 <T
MAR	.250 <T	.560 <T	.480 <T	.540 <T	.490 <T	.400 <T
APR	.770 <T	.450 <T	.340 <T	.260 <T	.330 <T	.280 <T
MAY	.780 <T	.580 <T	.470 <T	.450 <T	.600 <T	.460 <T
JUN	1.200	.980 <T	.750 <T	1.000 <T	.900 <T	.900 <T
JUL	.780 <T	.520 <T	.340 <T	.430 <T	.590 <T	.520 <T
AUG	.890 <T	.790 <T	.920 <T	.810 <T	.810 <T	.790 <T
SEP	1.000 <T	.880 <T	.900 <T	.820 <T	.760 <T	.730 <T
OCT	.880 <T	.520 <T	.510 <T	.520 <T	.550 <T	.570 <T
NOV	.780 <T	.390 <T	.420 <T	.240 <T	.300 <T	.340 <T
DEC	.660 <T	.120 <T	.290 <T	.100 <T	.280 <T	.460 <T
BARIUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000. (A1)	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	18.000	19.000	20.000	16.000	20.000	17.000
FEB	16.000	16.000	18.000	15.000	18.000	15.000
MAR	17.000	17.000	20.000	15.000	20.000	14.000
APR	17.000	15.000	19.000	16.000	15.000	14.000
MAY	18.000	17.000	21.000	17.000	19.000	16.000
JUN	17.000	16.000	19.000	17.000	19.000	19.000
JUL	17.000	16.000	18.000	16.000	18.000	17.000
AUG	15.000	15.000	17.000	15.000	16.000	16.000
SEP	16.000	16.000	16.000	16.000	17.000	16.000
OCT	17.000	15.000	18.000	16.000	18.000	15.000
NOV	16.000	15.000	18.000	15.000	19.000	15.000
DEC	15.000	16.000	17.000	14.000	18.000	14.000
BORON (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)	
JAN	5.300 <T	5.200 <T	5.000 <T	4.900 <T	5.500 <T	4.800 <T
FEB	5.000 <T	5.100 <T	6.100 <T	5.200 <T	4.900 <T	4.900 <T
MAR	5.600 <T	6.300 <T	7.300 <T	5.700 <T	5.800 <T	5.400 <T
APR	3.700 <T	4.000 <T	4.500 <T	4.600 <T	4.000 <T	3.500 <T
MAY	6.500 <T	4.400 <T	4.700 <T	2.700 <T	2.000 <T	2.100 <T
JUN	7.600 <T	5.100 <T	9.100 <T	5.200 <T	4.400 <T	5.200 <T
JUL	5.700 <T	6.400 <T	8.000 <T	5.700 <T	6.300 <T	6.200 <T
AUG	5.700 <T	5.100 <T	14.000 <T	5.200 <T	5.400 <T	5.100 <T
SEP	7.000 <T	11.000 <T	12.000 <T	10.000 <T	11.000 <T	9.000 <T
OCT	9.900 <T	9.900 <T	10.000 <T	8.000 <T	6.500 <T	8.100 <T
NOV	14.000 <T	14.000 <T	15.000 <T	13.000 <T	14.000 <T	9.600 <T
DEC	11.000 <T	12.000 <T	9.900 <T	11.000 <T	12.000 <T	7.700 <T
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010		GUIDELINE = .20 (H)	
JAN	.010 <T	.010 <T	.010 <T	BDL	BDL	BDL
FEB	.010 <T	.010 <T	BDL	.020 <T	.050 <T	.030 <T
MAR	.020 <T	.010 <T	.020 <T	.010 <T	.010 <T	.020 <T
APR	.050 <T	.070 <T	.040 <T	.030 <T	.040 <T	.020 <T
MAY	.070 <T	.090 <T	.020 <T	BDL	.030 <T	.020 <T
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	BDL	BDL	BDL	.020 <T	BDL	.020 <T
AUG	BDL	BDL	BDL	.020 <T	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	.040 <T	.070 <T	.070 <T	.070 <T	.020 <T	.020 <T
NOV	.080 <T	.030 <T	.050 <T	.030 <T	.040 <T	BDL
DEC	BDL	BDL	BDL	BDL	BDL	.080 <T
CADMIUM (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)	
JAN	BDL	.050 <T	BDL	BDL	.340 <T	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	BDL	BDL	.050 <T	BDL	.090 <T	BDL
MAR	BDL	BDL	BDL	BDL	.090 <T	BDL
APR	BDL	.070 <T	.290 <T	BDL	BDL	BDL
MAY	.060 <T	BDL	.110 <T	BDL	.070 <T	BDL
JUN	BDL	BDL	BDL	BDL	.080 <T	BDL
JUL	BDL	BDL	BDL	BDL	.130 <T	BDL
AUG	BDL	BDL	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	.060 <T	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	.110 <T	BDL	BDL	.060 <T	.080 <T	BDL
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 1000 (H)	
JAN	.110 <T	.120 <T	.070 <T	.110 <T	.080 <T	.080 <T
FEB	.120 <T	.090 <T	.070 <T	.080 <T	.090 <T	.130 <T
MAR	.110 <T	1.700	.070 <T	.140 <T	.090 <T	.140 <T
APR	.170 <T	.100 <T	.090 <T	.090 <T	.080 <T	.080 <T
MAY	19.000	26.000	.170 <T	.090 <T	.100 <T	.050 <T
JUN	.110 <T	.060 <T	.050 <T	.080 <T	.050 <T	.030 <T
JUL	.080 <T	.120 <T	.120 <T	.130 <T	.150 <T	.110 <T
AUG	.230 <T	.910 <T	.120 <T	.110 <T	.110 <T	.120 <T
SEP	.140 <T	.100 <T	.130 <T	.110 <T	.100 <T	.100 <T
OCT	.080 <T	.100 <T	.110 <T	.060 <T	.050 <T	.050 <T
NOV	.160 <T	.130 <T	.130 <T	.160 <T	.090 <T	.140 <T
DEC	.120 <T	2.000	.120 <T	.140 <T	.120 <T	.160 <T
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	.430 <T	.310 <T	.270 <T	.210 <T	.380 <T	.340 <T
FEB	.440 <T	.220 <T	.540 <T	.210 <T	.290 <T	.290 <T
MAR	.580 <T	.860 <T	1.100	.550 <T	.390 <T	.310 <T
APR	.660 <T	.300 <T	2.000	.330 <T	.320 <T	.280 <T
MAY	1.100	.870 <T	4.700	.240 <T	.180 <T	.150 <T
JUN	.780 <T	BDL	1.200	BDL	.990 <T	BDL
JUL	.480 <T	.370 <T	.340 <T	.320 <T	.370 <T	.320 <T
AUG	.260 <T	.200 <T	1.200	.150 <T	.200 <T	.140 <T
SEP	.720 <T	1.100	1.900	1.100	1.200	.870 <T
OCT	.850 <T	.870 <T	.410 <T	.540 <T	.320 <T	.680 <T
NOV	1.600	1.400	1.800	1.600	1.400	.740 <T
DEC	.950 <T	.790 <T	.580 <T	.720 <T	.850 <T	.280 <T
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	9.400	.810 <T	18.000	2.100	47.000	1.800
FEB	8.700	1.800	17.000	2.000	39.000	1.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
MAR	8.000	.660 <T	20.000	2.200	52.000	2.400
APR	9.800	.880 <T	25.000	2.100	35.000	1.400
MAY	15.000	.960 <T	60.000	2.900	43.000	1.800
JUN	18.000	1.300	31.000	3.200	40.000	3.200
JUL	16.000	1.400	20.000	3.300	42.000	2.800
AUG	22.000	1.800	18.000	3.200	46.000	7.100
SEP	12.000	1.800	21.000	3.400	37.000	5.100
OCT	9.700	2.500	23.000	3.700	44.000	3.700
NOV	9.300	.970 <T	25.000	3.500	33.000	2.400
DEC	13.000	1.100	18.000	2.200	42.000	2.000
IRON (UG/L)		DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)		
JAN	150.000	34.000 <T	12.000 <T	14.000 <T	21.000 <T	18.000 <T
FEB	140.000	14.000 <T	11.000 <T	13.000 <T	22.000 <T	16.000 <T
MAR	150.000	25.000 <T	22.000 <T	18.000 <T	19.000 <T	16.000 <T
APR	240.000	28.000 <T	30.000 <T	23.000 <T	26.000 <T	18.000 <T
MAY	150.000	25.000 <T	33.000 <T	20.000 <T	17.000 <T	15.000 <T
JUN	170.000	18.000 <T	11.000 <T	BDL	BDL	BDL
JUL	97.000	20.000 <T	14.000 <T	13.000 <T	17.000 <T	12.000 <T
AUG	120.000	15.000 <T	15.000 <T	11.000 <T	11.000 <T	12.000 <T
SEP	130.000	24.000 <T	24.000 <T	16.000 <T	21.000 <T	12.000 <T
OCT	160.000	20.000 <T	21.000 <T	16.000 <T	26.000 <T	28.000 <T
NOV	180.000	17.000 <T	17.000 <T	23.000 <T	14.000 <T	17.000 <T
DEC	180.000	33.000 <T	28.000 <T	21.000 <T	29.000 <T	26.000 <T
MERCURY (UG/L)		DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)		
JAN	.020	.020	.	.020	.	BDL
FEB	.020	.020	.	.020	.	.020
MAR	.050	.020	.	.010	.	.030
APR	.020	.030	.	.010	.	.030
MAY	.020 <T	.030 <T	.	BDL	.	.030 <T
JUN	.020 <T	.050 <T	.	BDL	.	.020 <T
JUL	BDL	BDL	.	.020 <T	.	.060
AUG	BDL	BDL	.	.020 <T	.	.070
SEP	BDL	BDL	.	BDL	.	.080
OCT	BDL	BDL	.	BDL	.	.120
NOV	.020 <T	BDL	.	.020 <T	.	.130
DEC	BDL	BDL	.	.020 <T	.	.110
MANGANESE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)		
JAN	12.000	12.000	4.900	9.700	7.800	8.100
FEB	9.400	11.000	7.200	10.000	9.400	9.400
MAR	11.000	12.000	8.800	10.000	9.400	9.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	16.000	10.000	9.300	9.700	9.200	8.700
MAY	23.000	26.000	14.000	11.000	8.000	7.700
JUN	15.000	8.900	8.400	7.400	5.600	4.500
JUL	11.000	8.100	7.300	7.500	8.700	6.200
AUG	17.000	5.800	4.600	4.800	4.500	5.400
SEP	14.000	19.000	6.900	6.200	8.100	6.000
OCT	11.000	7.700	5.100	5.400	6.300	5.100
NOV	11.000	11.000	5.000	6.600	6.200	6.300
DEC	11.000	11.000	3.600	5.600	6.800	7.000
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = 500 (H)	
JAN	.210 <T	.200 <T	.130 <T	.160 <T	.170 <T	.160 <T
FEB	.180 <T	.140 <T	.170 <T	.170 <T	.170 <T	.180 <T
MAR	.180 <T	.110 <T	.130 <T	.120 <T	.130 <T	.170 <T
APR	.160 <T	.250 <T	.240 <T	.150 <T	.140 <T	.110 <T
MAY	.220 <T	.210 <T	.200 <T	.210 <T	.180 <T	.180 <T
JUN	.260 <T	.200 <T	.220 <T	.240 <T	.260 <T	.230 <T
JUL	.190 <T	.210 <T	.190 <T	.180 <T	.170 <T	.190 <T
AUG	.180 <T	.180 <T	.210 <T	.150 <T	.190 <T	.210 <T
SEP	.180 <T	.160 <T	.160 <T	.150 <T	.120 <T	.120 <T
OCT	.210 <T	.170 <T	.200 <T	.210 <T	.180 <T	.220 <T
NOV	.210 <T	.150 <T	.200 <T	.140 <T	.150 <T	.190 <T
DEC	.130 <T	.160 <T	.120 <T	.120 <T	.180 <T	.260 <T
NICKEL (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)	
JAN	.770 <T	.630 <T	BDL	.230 <T	3.200	.210 <T
FEB	.750 <T	.440 <T	.340 <T	.270 <T	1.500	.390 <T
MAR	.740 <T	.200 <T	.300 <T	.100 <T	4.700	.110 <T
APR	.800 <T	.490 <T	.170 <T	.120 <T	2.500	BDL
MAY	1.400 <T	.370 <T	6.400	.340 <T	1.800 <T	.320 <T
JUN	1.200 <T	.960 <T	5.100	1.000 <T	3.300	.870 <T
JUL	.430 <T	.560 <T	1.600 <T	.610 <T	2.800	.550 <T
AUG	.730 <T	.650 <T	.880 <T	.540 <T	2.200	.610 <T
SEP	1.200 <T	.920 <T	2.500	.890 <T	2.700	.690 <T
OCT	.770 <T	.600 <T	.340 <T	.380 <T	1.900 <T	.330 <T
NOV	.410 <T	.290 <T	.490 <T	BDL	.870 <T	BDL
DEC	BDL	BDL	BDL	BDL	.940 <T	.580 <T
LEAD (UG/L)			DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)	
JAN	.250	.040 <T	.760	.060 <T	40.000	.520
FEB	.350	.040 <T	1.200	.070 <T	22.000	.200
MAR	.300	.080 <T	1.800	.120 <T	25.000	.360
APR	.410	.160 <T	41.000	1.800	6.500	.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE						
	RAW	TREATED	SITE 1		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW
MAY	.530	.140 <T	33.000	1.100	10.000	.530
JUN	.630	.190 <T	24.000	2.100	6.700	.730
JUL	.360	.050 <T	28.000	.940	24.000	.610
AUG	.530	.050 <T	18.000	1.400	5.100	.840
SEP	.380	.040 <T	11.000	.700	8.400	.470
OCT	.430	.070 <T	22.000	.910	8.300	.440
NOV	.360	BDL	12.000	1.500	7.000	.390
DEC	.340	.070 <T	4.200	.450	16.000	.400
ANTIMONY (UG/L)			DET'N LIMIT = .050		GUIDELINE = 146. (D4)	
JAN	.050 <T	.080 <T	.070 <T	.070 <T	.080 <T	.060 <T
FEB	.080 <T	.070 <T	.100 <T	.130 <T	.110 <T	.120 <T
MAR	.060 <T	.130 <T	.130 <T	.140 <T	.110 <T	.100 <T
APR	.090 <T	.120 <T	.130 <T	.110 <T	.110 <T	.110 <T
MAY	.140 <T	.120 <T	.120 <T	.110 <T	.140 <T	.120 <T
JUN	.070 <T	.060 <T	.090 <T	.090 <T	.100 <T	.080 <T
JUL	.070 <T	.100 <T	.100 <T	.090 <T	.070 <T	.070 <T
AUG	.070 <T	.060 <T	.420	.050 <T	.410	.050 <T
SEP	.490	.470	.400	.520	.550	.540
OCT	.090 <T	.100 <T	.100 <T	.090 <T	.110 <T	.100 <T
NOV	.270	.320	.290	.370	.410	.540
DEC	.250	4.300	.310	.350	.310	.460
SELENIUM (UG/L)			DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)	
JAN	.330 <T	.230 <T	BDL	.800 <T	.330 <T	.330 <T
FEB	BDL	.310 <T	.450 <T	BDL	BDL	BDL
MAR	.490 <T	.380 <T	.490 <T	BDL	BDL	.560 <T
APR	.410 <T	.260 <T	.350 <T	.230 <T	BDL	BDL
MAY	BDL	BDL	BDL	BDL	BDL	BDL
JUN	.230 <T	.780 <T	BDL	BDL	.490 <T	BDL
JUL	BDL	1.000 <T	1.600 <T	BDL	BDL	BDL
AUG	1.400 <T	.560 <T	BDL	BDL	.640 <T	BDL
SEP	.240 <T	BDL	BDL	BDL	BDL	BDL
OCT	BDL	.420 <T	.490 <T	.300 <T	.500 <T	.500 <T
NOV	1.600 <T	.530 <T	.580 <T	.580 <T	.580 <T	BDL
DEC	.440 <T	BDL	.590 <T	.590 <T	BDL	1.900 <T
STRONTIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2000.(H)	
JAN	55.000	72.000	72.000	74.000	76.000	74.000
FEB	42.000	56.000	62.000	61.000	63.000	62.000
MAR	50.000	66.000	73.000	65.000	73.000	66.000
APR	49.000	59.000	64.000	58.000	60.000	59.000
MAY	44.000	59.000	60.000	58.000	59.000	58.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	36.000	50.000	51.000	52.000	59.000	55.000
JUL	42.000	53.000	54.000	53.000	62.000	58.000
AUG	40.000	51.000	56.000	54.000	57.000	58.000
SEP	43.000	59.000	57.000	59.000	64.000	61.000
OCT	36.000	51.000	52.000	53.000	53.000	57.000
NOV	43.000	57.000	61.000	57.000	62.000	58.000
DEC	39.000	54.000	55.000	54.000	60.000	58.000
TITANIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	10.000	9.100	8.300	8.300	8.000	7.600
FEB	8.600	6.200	6.100	5.800	5.900	5.600
MAR	12.000	11.000	11.000	10.000	9.700	9.700
APR	17.000	6.400	6.300	5.900	6.600	5.900
MAY	9.000	8.100	4.200	3.800	3.900	4.000
JUN	8.800	4.300	3.700	3.500	3.200	3.200
JUL	6.800	6.400	6.500	7.200	6.900	6.300
AUG	7.300	5.700	5.700	5.200	5.400	5.300
SEP	6.500	6.800	6.300	6.500	6.500	5.900
OCT	7.600	4.400	4.200	4.200	4.600	4.500
NOV	11.000	8.700	8.800	7.700	8.600	7.700
DEC	7.200	6.400	6.100	5.800	6.500	6.200
THALLIUM (UG/L)			DET'N LIMIT = .010		GUIDELINE = 13. (D4)	
JAN	.010 <T	.010 <T	BDL	BDL	BDL	BDL
FEB	BDL	.020 <T	.010 <T	.040 <T	.030 <T	.040 <T
MAR	.010 <T	BDL	.010 <T	.010 <T	.010 <T	.010 <T
APR	BDL	.020 <T	.020 <T	BDL	BDL	BDL
MAY	.040 <T	.040 <T	.040 <T	.020 <T	.030 <T	.020 <T
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	.020 <T	BDL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL	BDL	.030 <T
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.080 <T	BDL	.060 <T	BDL	.030 <T	BDL
FEB	.040 <T	.020 <T	BDL	.040 <T	BDL	BDL
MAR	.090 <T	.040 <T	.030 <T	.030 <T	.030 <T	.020 <T
APR	.080 <T	.080 <T	.030 <T	.040 <T	.040 <T	.030 <T
MAY	.130 <T	.050 <T	.040 <T	.040 <T	.030 <T	.030 <T
JUN	.030 <T	BDL	.030 <T	BDL	BDL	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	.050 <T	.040 <T	.040 <T	.030 <T	.030 <T	BDL
AUG	.050 <T	.030 <T	BDL	.050 <T	BDL	BDL
SEP	.110 <T	.040 <T	.060 <T	.050 <T	.040 <T	.050 <T
OCT	.080 <T	.040 <T	.030 <T	.030 <T	.060 <T	.040 <T
NOV	.110 <T	.040 <T	.050 <T	.030 <T	.040 <T	.040 <T
DEC	.080 <T	BDL	.050 <T	.040 <T	.050 <T	.170 <T
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = 100 (N)	
JAN	.320 <T	.650	.820	.740	.840	.690
FEB	.320 <T	.510	.620	.540	.650	.560
MAR	.400	.560	.740	.640	.780	.610
APR	.570	.670	.690	.570	.680	.650
MAY	.380 <T	.990	.960	.930	.980	.960
JUN	.530	1.000	1.100	1.400	.930	.880
JUL	.430 <T	1.000	1.000	1.400	1.200	1.100
AUG	.600	1.100	1.100	1.000	1.200	1.100
SEP	.470 <T	1.100	1.100	1.100	1.000	1.000
OCT	.450 <T	.940	.980	.920	1.100	1.000
NOV	.530	.990	.990	.930	.970	.850
DEC	.440 <T	.840	1.000	.880	1.100	1.000
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5000. (A3)	
JAN	3.600	3.100	3.000	2.300	17.000	2.600
FEB	5.200	2.800	5.800	2.500	16.000	2.900
MAR	3.600	3.100	7.700	2.400	20.000	3.500
APR	4.000	3.700	22.000	3.700	16.000	3.000
MAY	3.800	2.500	24.000	2.800	12.000	2.500
JUN	3.600	1.900	14.000	2.000	19.000	2.100
JUL	3.100	2.300	14.000	2.900	15.000	2.900
AUG	2.300	1.500	9.400	1.800	11.000	2.900
SEP	2.400	2.100	21.000	2.100	9.700	2.100
OCT	3.000	2.200	25.000	1.800	15.000	2.100
NOV	2.700	1.900	19.000	2.700	11.000	2.400
DEC	3.200	2.500	4.800	2.100	13.000	2.800

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROAROMATICS						
HEXACHLOROETHANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 1900 (D4)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	ILA	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	5.000 <T	.	5.000 <T
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	7.000 <T	.	5.000 <T	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	ILA	BDL	.	BDL	.	BDL
DEC	IQU	IQU	.	IQU	.	IQU

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
CHLOROPHENOLS						
246-TRICHLOROPHENOL (NG/L)		DET'N LIMIT = 50.		GUIDELINE = 5000 (1),		
JUN	BDL	BDL	.	.	.	.
NOV	BDL	80.000 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1 STANDING	SITE 1 FREE FLOW	SITE 2 STANDING	SITE 2 FREE FLOW
PESTICIDES & PCB						
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)	
JAN	BDL	BDL	.	2.000 <T	.	2.000 <T
FEB	2.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
MAR	2.000 <T	2.000 <T	.	!LA	.	2.000 <T
APR	2.000 <T	1.000 <T	.	1.000 <T	.	1.000 <T
MAY	BDL	BDL	.	2.000 <T	.	2.000 <T
JUN	1.000 <T	1.000 <T	.	BDL	.	5.000 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	1.000 <T	3.000 <T	.	2.000 <T	.	2.000 <T
SEP	BDL	1.000 <T	.	1.000 <T	.	BDL
OCT	BDL	1.000 <T	.	1.000 <T	.	BDL
NOV	!LA	2.000 <T	.	1.000 <T	.	BDL
DEC	!QU	!QU	.	!QU	.	!QU
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	4.000 <T
MAR	BDL	1.000 <T	.	!LA	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	1.000 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	1.000 <T	1.000 <T	.	1.000 <T	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	!LA	BDL	.	BDL	.	BDL
DEC	!QU	!QU	.	!QU	.	!QU

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	BDL	BDL	.	.	.	.
FEB	.600 <T	.600 <T	.	.	.	.
MAR	.600 <T	.600 <T	.	.	.	.
APR	.400 <T	.600 <T	.	.	.	.
MAY	4.200	3.000	.	.	.	.
JUN	.	2.000	.	.	.	.
JUL	1.800	1.600	.	.	.	.
AUG	1.000 <T	.800 <T	.	.	.	.
SEP	9.600	6.000	.	.	.	.
OCT	3.200	2.400	.	.	.	.
NOV	1.000	.600 <T	.	.	.	.
DEC	2.000	1.000	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES						
BENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 5.0 (B1)	
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	!NR	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	.050 <T	.	.050 <T
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
TOLUENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)	
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	.050 UCS	.	!NR	.	.050 UCS
JUN	BDL	BDL	.	.050 <T	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	.050 <T	.	.050 <T	.	.050 <T
DEC	BDL	BDL	.	BDL	.	BDL
ETHYLBENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)	
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	!NR	.	BDL
JUN	BDL	.050 <T	.	.100 <T	.	.050 <T
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	.100 <T	.	BDL
SEP	BDL	.050 <T	.	.050 <T	.	BDL
OCT	BDL	BDL	.	.050 <T	.	BDL
NOV	BDL	.050 <T	.	.050 <T	.	BDL
DEC	.050 <T	.100 <T	.	BDL	.	BDL
M-XYLENE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 300 (B4)	
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	.100 <T	.	!NR	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
SITE			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	BDL	BDL	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
STYRENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)		
SEP	BDL	.350 <T	.	.500 <T	.	.300 <T
OCT	.050 <T	.250 <T	.	.300 <T	.	.250 <T
NOV	.050 <T	.400 <T	.	.400 <T	.	.250 <T
DEC	.200 <T	.150 <T	.	.050 <T	.	.150 <T
CHLOROFORM (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)		
MAR	!TX	!TX	.	!TX	.	!TX
APR	.200 <T	46.800	.	46.100	.	51.500
MAY	BDL	61.600	.	!NR	.	47.500
JUN	.400 <T	162.000	.	163.000	.	154.000
JUL	.400 <T	255.000	.	250.000	.	285.000
AUG	1.100	169.000	.	165.000	.	175.000
SEP	BDL	206.000	.	155.000	.	169.000
OCT	.300 <T	177.000	.	162.000	.	171.000
NOV	1.000	139.000	.	109.000	.	128.000
DEC	.200 <T	91.100	.	84.000	.	96.700
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 350 (A1+)		
MAR	BDL	!TX	.	!TX	.	!TX
APR	BDL	.600	.	.700	.	.800
MAY	BDL	1.400	.	!NR	.	.750
JUN	BDL	2.400	.	2.400	.	2.400
JUL	.250 <T	2.900	.	2.950	.	3.250
AUG	BDL	4.100	.	3.400	.	3.450
SEP	BDL	2.700	.	2.250	.	2.500
OCT	.100 <T	2.250	.	2.200	.	2.250
NOV	BDL	2.250	.	2.000	.	2.100
DEC	BDL	1.700	.	1.500	.	1.600
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	!NR	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	.200 <T	.200 <T	.	.200 <T	.	.200 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM OTTAWA WSS (BRITANNIA) 1988

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	BDL	.100 <T	.	BDL	.	BDL
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.100 <T	.	.200 <T	.	.200 <T
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
T-CHLOROETHYLENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)		
MAR	BDL	BDL	.	BDL	.	BDL
APR	BDL	BDL	.	BDL	.	BDL
MAY	BDL	BDL	.	INR	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.050 <T
SEP	BDL	BDL	.	BDL	.	BDL
OCT	BDL	.050 <T	.	.100 <T	.	.050 <T
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500		GUIDELINE = 350 (A1)		
MAR	ITX	ITX	.	ITX	.	ITX
APR	BDL	47.400	.	46.800	.	52.300
MAY	BDL	63.000	.	INR	.	48.250
JUN	BDL	164.400	.	165.400	.	156.400
JUL	.850 <T	258.100	.	253.150	.	288.450
AUG	1.100 <T	173.200	.	168.400	.	178.450
SEP	BDL	208.700	.	157.250	.	171.500
OCT	BDL	179.350	.	164.400	.	173.450
NOV	1.000 <T	141.250	.	111.000	.	130.100
DEC	BDL	92.800	.	85.500	.	98.300

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)
SODIUM	MG/L	.20	200. (C3)
AMMONIUM TOTAL	MG/L	.002	.05(F2)
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
BERYLLIUM	UG/L	.010	0.20	(H)
CADMIUM	UG/L	.050	5.0	(A1)
COBALT	UG/L	.020	1000.	(H)
CHROMIUM	UG/L	.100	50.	(A1)
COPPER	UG/L	.100	1000.	(A3)
IRON	UG/L	4.0	300.	(A3)
MERCURY	UG/L	.01	1.0	(A1)
MANGANESE	UG/L	.050	50.	(A3)
MOLYBDENUM	UG/L	.020	500.	(H)
NICKEL	UG/L	.100	50.	(F3)
LEAD	UG/L	.050	50.	(A1)
SELENIUM	UG/L	.200	10.	(A1)
SILVER	UG/L	.020	50.	(A1)
STRONTIUM	UG/L	.050	2000.	(H)
THALLIUM	UG/L	.010	13.	(D4)
TITANIUM	UG/L	.050	N/A	
URANIUM	UG/L	.020	20.	(A2)
VANADIUM	UG/L	.050	100.	(H)
ZINC	UG/L	.020	500.	(A3)
PHENOLICS				
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0	(A3)
PESTICIDES & PCB				
ALDRIN	NG/L	1.0	700.	(A1)
AMETRINE	NG/L	50.	300000.	(D3)
ATRAZINE	NG/L	50.	60000.	(B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700.	(G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300.	(G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000.	(A1)
ALPHA CHLORDANE	NG/L	2.0	7000.	(A1)
GAMMA CHLORDANE	NG/L	2.0	7000.	(A1)
BLADEX	NG/L	100.	10000.	(B3)
DIELDRIN	NG/L	2.0	700.	(A1)
METHOXYCHLOR	NG/L	5.0	100000.	(A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000.	(D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000.	(D4)
ENDRIN	NG/L	4.0	200.	(A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A	
HEPTACHLOR EPOXIDE	NG/L	1.0	3000.	(A1)
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A
BENZO(B)CHRYSENE	NG/L	2.0	N/A
CORONENE	NG/L	10.0	N/A
SPECIFIC PESTICIDES			
TOXAPHENE	NG/L	N/A	5000. (A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000. (B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000. (A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000. (B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A
DICAMBA	NG/L	100.	87000. (B3)
PICHLORAM	NG/L	100.	2450000. (D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000. (A1)
DIAZINON	NG/L	20.	14000. (A1)
DICHLOROVOS	NG/L	20.	N/A
DURSBAN	NG/L	20.	N/A
ETHION	NG/L	20.	35000. (G)
GUTHION	NG/L	N/A	N/A
MALATHION	NG/L	20.	160000. (G)
MEVINPHOS	NG/L	20.	N/A
METHYL PARATHION	NG/L	50.	7000. (B3)
METHYLTRITHION	NG/L	20.	N/A
PARATHION	NG/L	20.	35000. (B1)
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)